



Orange  
County  
Beekeepers  
Association

## *Bee School*

### **Products of the Hive Resource Listing**

#### **Books**

*Beeswax: Production, Harvesting, Processing and Products* - Roger A. Morse and William L Coggshall, ISBN: 9994786504

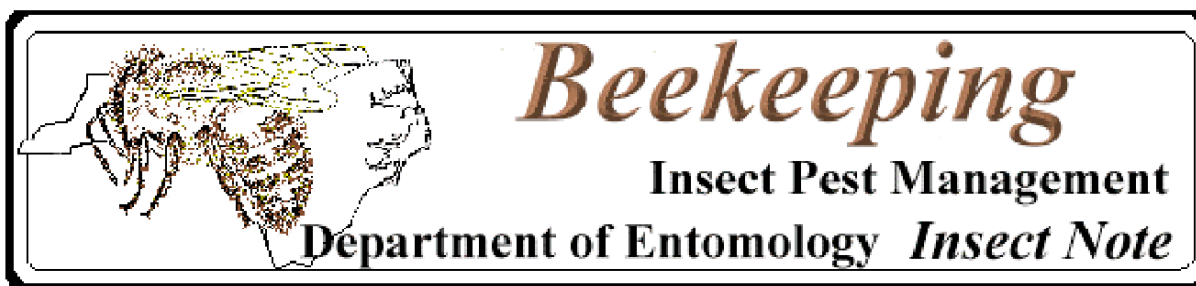
This book reviews the production of beeswax by all honey bee species, the methods used by beekeepers to harvest beeswax, the way beeswax is process, and how it may be made into useful products like candles, creams and countless others.

*The Compleat Meadmaker: Home Production of Honey Wine From Your First Batch to Award-winning Fruit and Herb Variations* - Ken Schramm, ISBN: 0937381802

Mead (honey wine) is the new buzz among beverage hobbyists as more and more consumers start to make their own. This up-to-date title tells the novice how to begin and the experienced brewer or winemaker how to succeed in this newest of the beverage arts.

*The Hive and the Honey Bee* - Dadant & Sons, available at [www.dadant.com](http://www.dadant.com)

The latest edition of the classic book on beekeeping. Completely rewritten, revised and enlarged. The best reference book on honey bees and beekeeping. 22 chapters, 33 world-famous authors, hundreds of photos and drawings, clothbound with attractive gold stamped cover and spine, and many special features: new 52-page U.S. and Canadian honey plants table, updated Africanized honey bee information, parasitic bee mites management, business practices, marketing, hive products, bee behavior, pesticides, and more.



**Note 3.06**  
(Previously Note #16A)

### PREPARING LIQUID HONEY FOR COMPETITION & SALE

The art of beekeeping provides opportunities for the hobbyist to do more than just raise bees. One such opportunity is that of producing award-winning honey that can be entered in local and state fair honey competitions. Tasty honey is important, but even more so is the overall presentation of your product. There are several qualities that determine a winning entry. While some of these qualities are beyond the control of the beekeeper, steps can be taken to reduce or eliminate many of the factors that downgrade honey entries. Extracted honey is the most popular type of honey submitted in contests, and it will be the only type discussed here.

Beekeeping Note #16, Judging Liquid (Extracted) Honey, discusses the characteristics used in judging honey. This note gives recommendations for submitting high quality honey for competition or for sale. Figure 1 is a sample honey judging form.

JUDGE=S SCORE CARD N.C. STATE FAIR		
Event: EXTRACTED HONEY    Class: _____ Entry No. _____		
Point Scoring		Item
10		Density (Moisture content over 18.6%--DISQUALIFIED)
10		Absence of granulation or crystallization
30		Cleanliness: absence of lint, dirt, wax & foam
15		Flavor: absence of overheating & fermentation
15		Color & brightness
15		Container appearance: cleanliness & uniformity
5		Uniformity of entries in class
		Remarks:

*Fig. 1 -- Judging criteria for liquid (extracted) honey*

1. Density

One important factor is density which is related to the moisture content of the honey. The moisture content is not to exceed 18.6%. The main reason moisture content is so important is that excessive moisture will allow yeasts to grow, thereby causing fermentation. Using honey frames that are at least 75% capped will usually assure that the honey has a low enough moisture content. *Always* test your honey for the proper viscosity before submitting an entry. This can be done by a) learning for yourself what the proper viscosity feels and looks like; b) contacting a state land grant university apiculture program and getting recommendations from them; or c) asking the officials of the honey judging competition to measure the density for you.

2. Absence of granulation or crystallization

Another factor involved in the judging of honey is the absence of granulation. While granulation is a natural process, measures can be taken to keep this factor under control. One way to reduce the risk of granulation is to submit a type of honey that has a low glucose content, as this type honey tends to granulate less. Both tulip poplar and sourwood honey are good choices of honey that are low in glucose and high in fructose. (Note: Honey with high fructose levels taste sweeter than high glucose honey.) It is also helpful to heat the honey to remove any crystals or granules that may already be present. This can be done by placing the honey in a water bath having a temperature range of 95-120°F. Finally, any crystals or granules that are still present can be removed by filtering, which is discussed under Item #3, Cleanliness.

3. Cleanliness

The honey is also judged on cleanliness. Submissions will be inspected for any dirt, wax, lint, or foam. Filling the jar with warm honey will cause any wax to float to the top of the jar where it can be skimmed off. In order to prevent foam, pour the honey into the jar slowly. It is also helpful to keep the distance between the honey and the jar in which you are pouring it to a minimum, perhaps even hitting the side of the jar with the honey as you pour. Any further dirt, wax, or lint should be filtered out before submission using an appropriate lint-free filter. Pantyhose is a good choice of a filter that does not produce lint, while cheese-cloth is a poor choice, as it does produce lint.

4. Flavor

The importance of flavor in judging is usually limited to overheating, fermentation, and obviously, unpleasant flavors. Overheating will cause a burnt sugar flavor, while fermentation can cause the honey to taste sour. Certain floral sources such as tobacco can produce unpleasant, even disagreeable-tasting honey. *Always* taste the honey you plan to submit. This is an obvious point but one often overlooked.

5. Color and Brightness

Judges also look at both the color and brightness of honey submissions. While these factors are unrelated to the flavor of the honey, they contribute to the aesthetic value of the honey, which is important to the consumer. Cleaning and filtering the honey as well as slightly heating it prior to competition can improve the color and brightness. This can be done by pouring honey that has been heated through a filter to remove impurities. (Note: Never heat the honey to temperatures over 140°F for more than 30 minutes.)

6. Container Appearance

Judges also look at the cleanliness of the container in which your honey is submitted. Always make sure your containers are free of smudges and imperfections. Imperfections in the glass can appear to be debris in the honey itself. Wiping with a moist, lint-free towel before submission will remove any travel stains from your honey jars. Judges also look under the lid, so be sure to wipe out this area as well. It only takes a small effort to see that your containers are appropriately clean, so don't miss points on this one! Also, remember to fill the jars to the appropriate level. This is between the grooves at the mouth of the jar. Filling over this level will make it easier to spill the honey when the jar is opened, and underfilling may make a

consumer feel cheated. It is also a good idea to use glass containers for competitions, even though they are more expensive and heavier than plastic ones. Glass jars don't scratch as easily as plastic ones. Save the less expensive plastic containers for selling your honey.

7. Uniformity of Entries in Class

A final factor judges grade when choosing a winner is the uniformity among your submissions. You are usually required to submit three jars of honey to represent your entry. Make sure they all look as much alike as possible, adhering to the proper guidelines. Judges often randomly select from the three jars, so make sure all three are of the highest quality possible.

Entering honey in competitions allows the beekeeper to take pride in his/her product. It gives the beekeeper the opportunity to be rewarded for the hard work and dedication this hobby requires. It also gives one the chance to learn from mistakes and improve the product in the future. The recommendations for preparing award-winning entries will also help you in preparing attractive eye-appealing honey for sale. Don't miss out on the opportunity to win a ribbon or even a cash award -- enter your honey at the next local or state fair. Good luck!!

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## Solar Beeswax Rendering and Hints for Exhibiting Wax Blocks<sup>1</sup>

Malcolm T. Sanford<sup>2</sup>

When it comes to rendering beeswax, nothing works like a solar wax extractor or melter. The melter can be made from almost any materials found around the beekeeper's establishment and adapted to any size apiary.

The principles of wax extractor design are always the same, although the details of each specific apparatus may differ. Bits of wax, old comb and other scrapings from the hive are placed on a slanted (usually metal) tray inside a box. The box is then covered tightly with a glass top and oriented toward the sun. As the temperature rises inside the box, the wax melts and drips off the tray into the collector pan. This pan usually has slanted sides, facilitating removal of the wax block once it hardens. A suggested plan for building an extractor is shown in Figure 1.

Usually, the inside of the box is painted black to absorb as much radiation as possible, facilitating heat buildup inside the melter. The melter should always be bee tight; honey bees are usually attracted to the odor of melting wax (often there is honey adhered to the wax) and this may promote robbing during nectar dearths.

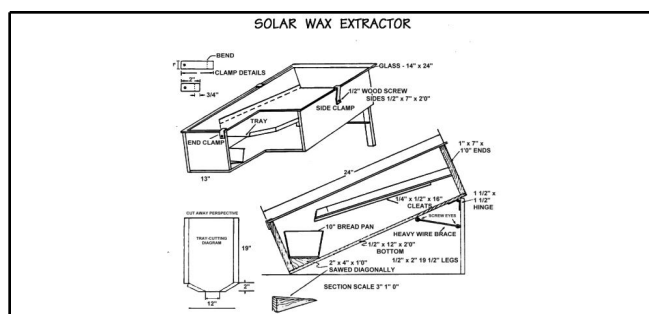


Figure 1.

It is generally agreed the best way to put up good beeswax for show in fairs and other events is to use a solar wax extractor. Wax is judged on several criteria including: color, cleanliness and freedom from honey, propolis and other adulterants; uniformity of appearance; and freedom from cracking and shrinking.

The best-colored (light yellow) beeswax comes from that rendered from cappings; wax from old combs is often quite dark. Bleaching in the sun will often lighten the color of rendered wax.

Generally, wax from a melter is extremely clean. The longer it stays liquid with the resultant settling of foreign materials, the cleaner it will become. This can be accomplished in the wax extractor or in a warm

1. This document is ENY111, one of a series of the Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Reviewed May 1, 2003. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.

2. Malcolm T. Sanford, professor, Department of Entomology and Nematology, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

turned-off oven. Once a cake of wax has hardened, detritus can be scraped off the bottom and if necessary, the cleaning process repeated.

Uniformity and absence of cracks in a wax block because of shrinkage is minimized by allowing beeswax to cool very slowly. The preferred mold is a bread pan with slanted sides. Once a cake is ready for submitting to a judge, do not touch it (fingerprints will cause points to be subtracted), but wrap it in plastic. Good luck!



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## **PROPOLIS**

**What is it and what do honey bees do with it ?**



Photo Copyright 2002 Kerrie Purcell

**See the blackish colored resin in this honey bee's pollen basket ?**

**The Worker Bees make this into "propolis"**



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This resinous substance is gathered from the buds or limbs of some trees. It is brittle in cold weather but so sticky in the warm weather that the workers apply it immediately to stop up cracks inside the hive to keep out the wind and rain, to reduce too large an entranceway, and to strengthen the combs at their juncture with the walls of the hive. Sometimes little critters like a field mouse will come into a hive as the weather gets cold. The bees will sting it to death and then seal up the corpse (much like a mummy is wrapped up) with the propolis.

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PROPOLIS is often called "bee glue." It is the sticky resin that seeps from the buds of some trees and oozes from the bark of others. The trees that produce this resin are mainly conifers, which are evergreens that produce cones. Bees seem to prefer the resin from the poplar tree. There are only a few propolis-gathering experts in each hive. Bees of foraging age collect propolis only on warm days when the resin is soft and pliable. As the resin is gathered, it is blended with wax flakes secreted from special glands on the abdomen of the bee. The mixture is then kneaded or molded into a tiny ball and placed into the pollen baskets located on the legs of the bee. When the source is exhausted she flies to another area to gather until her pollen baskets are full. It may take an hour to fill her baskets. The same procedure is used in reverse when she takes her load back to the hive where the receiving bees help unload and store the substance. This procedure can take several hours.

Propolis is used to reduce the size of the entrance and to patch up holes or cracks. It is also used as an antiseptic, lining each cell and the interior of the hive. If another insect enters the hive, it is promptly killed and removed. If the body is too large to remove, it is covered with propolis to keep its contaminants from harming the hive.

Pliny, the Elder (79-23 BC) divided propolis into three categories: 1) commosis - referring to its use as a disinfectant; 2) pissoceros - referring to its use as a structural reinforcement; 3) propolis --referring to the reduction of the entrance to the bee's city or "polis." Pliny also describes the medicinal action of propolis on humans in the reduction of swelling, the soothing of pain, and the healing of open sores.

It is reported that the renowned Stradivarius (1644-1737 AD) handmixed his own propolis varnish to polish his handcrafted instruments. Having made only 1,116 stringed instruments, no one has ever been able to duplicate his workmanship or his recipe for this varnish.

During the Boer War (1888-1902 AD), propolis was mixed with petroleum jelly and used successfully to disinfect wounds. Before the days of antibiotics, propolis was used most often to combat infections. More recently, it has shown to be effective against bacteria resistant to penicillin, ampicillin, methicillin, streptomycin, chloramphenicol, oxytetracycline, erythromycin, and sulfathiazole. It is also effective against E. coli and salmonella.

Used with alcohol, propolis has removed molds and fungi more efficiently and for a longer period of time than standard remedies. Propolis has antiseptic, antibiotic, antibacterial, antiviral, and antifungal properties. Scientists state that at least part of this can be attributed to the galangin, caffeic acid, and ferulic acid components. Other known components of propolis include: 55% balsam and resinous compounds, 30% beeswax, 10% ethereal and aromatic oils, 5% pollen, plus flavonoids, cinnamic acid, cinnamyl alcohol, vanillin, caffeic acid, tetrochrysin, isalpinin, pinocembrin, chrysin, galangin, and ferulic acid. Propolis is said to have 500 times more flavonoids than the average orange.

source: [www.bees-online.com](http://www.bees-online.com)